

EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

<hr/>)	
FUMA INTERNATIONAL, LLC,)	
)	
Plaintiff,)	
)	
v.)	Case No. 1:19-CV-00260-CCE-JEP
)	
R.J. REYNOLDS VAPOR COMPANY,)	
)	
Defendant.)	
<hr/>)	

OPENING EXPERT REPORT
STEPHEN A. HOLZEN

JULY 23, 2020

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
	A. QUALIFICATIONS	1
	B. ASSIGNMENT	2
	C. EVIDENCE CONSIDERED	2
II.	ASSUMPTIONS.....	3
III.	SUMMARY OF LEGAL PRINCIPLES	3
IV.	SUMMARY OF DAMAGES CONCLUSIONS.....	3
V.	OVERVIEW OF THE CIGARETTE AND TOBACCO INDUSTRY	4
	A. THE INDUSTRY BEFORE 2013	4
	B. THE INDUSTRY FROM 2013-2017	7
	C. THE INDUSTRY FROM 2017 TO PRESENT	10
VI.	OVERVIEW OF THE RELEVANT PARTIES	12
	A. FUMA INTERNATIONAL, LLC	12
	B. R.J. REYNOLDS VAPOR COMPANY	13
VII.	OVERVIEW OF THE RELEVANT PRODUCTS.....	13
	A. PLAINTIFF’S EMBODYING PRODUCTS.....	13
	B. DEFENDANT’S ACCUSED PRODUCTS	14
VIII.	OVERVIEW OF THE PATENTS-IN-SUIT	19
	A. US PATENT 9,532,604	19
	B. US PATENT 10,334,881	19
	C. BENEFITS ASSOCIATED WITH THE PATENTS-IN-SUIT	20
IX.	KEY EVENT TIMELINE.....	21
X.	BACKGROUND OF THE DISPUTE.....	22
XI.	CLAIMS FOR MONETARY DAMAGES.....	31
XII.	REASONABLE ROYALTIES	32
	A. DATE OF THE HYPOTHETICAL NEGOTIATION	32
	B. DAMAGES PERIOD(S)	33
	C. PARTIES TO THE NEGOTIATION	33
	D. STRUCTURE OF THE HYPOTHETICAL LICENSE AGREEMENT	33
	E. ROYALTY BASE CALCULATION.....	37
XIII.	ROYALTY RATE ANALYSIS	48
	A. THE INCOME APPROACH.....	48
	B. THE MARKET APPROACH.....	54
	C. THE COST APPROACH	59
	D. CONCLUSIONS OF THE QUANTITATIVE ANALYSIS	61
	E. CONSIDERATION OF THE GEORGIA-PACIFIC FACTORS.....	62
	F. CALCULATION OF REASONABLE ROYALTY DAMAGES.....	75

XIV. DAMAGES CONCLUSIONS..... 76
XV. POSSIBLE REVISIONS TO THIS REPORT 76
XVI. PROFESSIONAL FEE ARRANGEMENT 76

I. INTRODUCTION

A. QUALIFICATIONS

1. I am a Director at Stout Risius Ross, LLC (“Stout”). Stout is a premier global financial advisory firm that specializes in Investment Banking, Valuation & Financial Opinions, and Dispute Advisory & Forensic Services. My business address is 1015 15th Street NW, Suite 1050, Washington, DC, 20005. I am a member of Stout’s Disputes, Compliance, & Investigations group and the Intellectual Property group.
2. I have testified as an expert witness and served as an expert consultant in federal and state courts, at the U.S. International Trade Commission (ITC) and before the U.S. Patent Trial and Appeal Board (PTAB). I have provided analyses in various forums on issues including lost profits, reasonable royalties, unjust enrichment, corrective advertising, domestic industry, public interest factors, exclusion remedies, and secondary considerations.
3. I have lectured about intellectual property damages and valuation issues on several occasions and have published articles about intellectual property damages, licensing and valuation issues. I co-authored a book titled “Winning the Patent Damages Case,” which serves as a guide for patent litigators and in-house counsel involved in patent infringement matters.
4. Prior to my consulting career, I served as a Patent Examiner with the U.S. Patent and Trademark Office from 2001-2007. I was an examiner in Art Unit 3644, and I was responsible for managing a portfolio of over 200 pending patent applications. As an examiner, I issued more than 300 patents in aeronautics and astronautics, business methods, mechanical guns and projectors, firearms, ammunitions and explosives, and animal husbandry. As an examiner, I researched inventive technologies, analyzed prior art, authored many non-final and final patentability opinions, and negotiated allowable subject matter.
5. I am a registered Patent Agent (Registration #56,008) and an active member of the American Intellectual Property Law Association and have Chaired AIPLA’s Patent Damages Subcommittee and its Patent Agent Committee. I have been recognized as a leading patent professional in the IAM 1000 in 2019 and 2020.
6. I hold a Bachelor of Science degree in Mechanical Engineering from the Pennsylvania State University and a Master of Business Administration degree from American University.
7. I am a Certified Licensing Professional (“CLP”) and a Certified Valuation Analyst (“CVA”). I am a member of the Licensing Executives Society (“LES”), the National Association of Certified Valuators and Analysts (“NACVA”), and the American Intellectual Property Law Association (“AIPLA”).
8. I have served as a consultant on a variety of patent-related matters. Almost all my work has focused specifically on intellectual property matters including those related to valuation, disputes, monetization, and intellectual property management.

9. A copy of my curriculum vitae is provided as **Exhibit A**, which includes a more detailed description of my education and my professional experience. This report contains my opinions with respect to damages adequate to compensate the Plaintiff. My report also includes additional information required by Federal Rule of Civil Procedure 26(a)(2)(B).

B. ASSIGNMENT

10. I have been retained by counsel for Fuma International, LLC (“Fuma” or “Plaintiff”) to provide an analysis of damages suffered by Plaintiff as a result of the alleged patent infringement by R.J. Reynolds Vapor Company (“RJR” or “Defendant”). I understand that Plaintiff alleges that RJR has infringed certain claims of U.S. Patent Nos. 9,532,604 (“the ‘604 Patent”) and 10,334,881 (“the ‘881 Patent”) (collectively “the Patents-in-Suit”).¹
11. I also submitted an expert report in this Matter on July 23, 2020 (the “Holzen Marking Report”). The Holzen Marking Report provides my analysis of Fuma’s financial and operational data to allow a jury to assess the efforts made by Fuma, as a patent owner, to mark its Embodying Products.

C. EVIDENCE CONSIDERED

12. In arriving at the conclusions outlined below, I base my opinions on my expertise in accounting, financial, and damage analysis, independent research of publicly available information, and a review of various documents and pleadings produced to date by both the Plaintiff and the Defendant. I list the documents and information considered in forming the opinions expressed in this report in **Exhibit B**. I also spoke with Ms. Rebecca Conley (“Mrs. Conley”), cofounder of Fuma, and Dr. Glenn Vallee (“Dr. Vallee”), technical expert for Fuma.
13. I considered and evaluated the reliability of the underlying data and the degree to which the record supports my assumptions. The accounting and finance professions accept the techniques I used to calculate damages and I have sufficiently explained and disclosed my methods and calculation to permit a review of my work.
14. The analyses used to form my opinions are included in the exhibits attached to this report. These exhibits do not include copies of original source documents produced by the parties to this litigation or demonstratives I may use at trial. I may supplement or amend these exhibits to the extent other parties produce additional documents, exhibits, or other materials. With respect to my anticipated trial testimony in this case, I may use as exhibits certain documents produced, or testimony given in this action, which I reviewed or relied upon in this report. I may also create certain demonstrative exhibits, including summary charts, to assist me in presenting my trial testimony.
15. This report and the opinions expressed herein are based on my analysis of the materials I have reviewed to date. I may supplement, refine or revise my analysis as appropriate based on additional testimony, documents, or other discovery materials as they become

¹ Complaint for Patent Infringement dated March 6, 2019 (1:19-cv-00260); Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

available. I expect to be asked to review and respond as necessary to any opinions related to damages submitted by experts for the Defendant.

II. ASSUMPTIONS

16. As in all cases, whether engaged by counsel for a plaintiff or a defendant, I assume that the Patents-in-Suit are valid and infringed by the Defendant. I also assume Fuma and RJRV would hold a hypothetical negotiation for a license to the Patents-in-Suit on January 3, 2017, which I understand to be the date RJRV first infringed the '604 Patent.² If the court determines that the '604 Patent is not valid or infringed, then alternatively I would assume that Fuma and RJRV would hold a hypothetical negotiation for a license to the '881 Patent on July 2, 2019, which I understand to be the date RJRV first infringed the '881 Patent.³
17. I have been asked to assume that Fuma marked the '604 Patent number on Fuma's Embodying Products by July of 2017. I have also been asked to assume that Fuma notified RJRV of its infringement of the '881 Patent on July 2, 2019.⁴

III. SUMMARY OF LEGAL PRINCIPLES

18. The guiding principle in the determination of damages resulting from patent infringement is the amount of damages adequate to compensate for the assumed infringement. It is my understanding that a patent owner may seek monetary relief from infringement under two theories: lost profits or a reasonable royalty, and that the reasonable royalty may take the form of either a lump sum or a running royalty, or a combination of the two. Whenever I use the term "reasonable royalty" in this report, it should be understood to encompass a running royalty, a lump sum, or a combination of the two in exchange for a license for the Patents-in-Suit. Moreover, as stated in 35 U.S.C. § 284, a finding of patent infringement requires that the patent owner be compensated for an act of infringement in an amount no less than a reasonable royalty.⁵

IV. SUMMARY OF DAMAGES CONCLUSIONS

19. I understand that under patent law, Fuma is entitled to compensation for infringement of the Patents-in-Suit of no less than a reasonable royalty on the infringement by RJRV. A reasonable royalty calculation is typically calculated by multiplying a royalty base by a royalty rate. I have therefore performed a reasonable royalty calculation by first calculating a royalty rate and then calculating a royalty base. In my opinion, a reasonable royalty rate for the infringing use of the Patents-in-Suit is 14% of RJRV's revenue. This royalty is based on my analysis of the facts and circumstances surrounding a hypothetical negotiation between the parties and on my evaluation of the Georgia-Pacific factors.
20. If the fact finder, which I understand will be a jury in this case, awards a reasonable royalty that is structured as a running royalty, then it is my opinion that Fuma is owed a

² US Patent 9,532,604.

³ Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-0660).

⁴ Fuma actually notified RJRV of its infringement of the '881 Patent through the filing of a Complaint for 1:19-cv-00260 and Complaint on July 2, 2019 (1:19-cv-0660).

⁵ 35 U.S.C. § 284.

reasonable royalty that ranges from \$64.0 million to \$65.1 million for the infringement of the Patents-in-Suit from July 1, 2017 to March 31, 2021.⁶ Alternatively, if the fact finder awards a reasonable royalty that is structured as a lump sum, then it is my opinion that Fuma is owed a reasonable royalty that ranges from \$104.4 million to \$135.4 million.⁷

21. I understand that Fuma asserts that RJRV's infringement was willful, which may merit an enhancement of damages. My analysis results in a damages calculation that has not been enhanced. I will calculate enhanced damages and prejudgment interest if asked to do so at a later date.

V. OVERVIEW OF THE CIGARETTE AND TOBACCO INDUSTRY

22. The parties in this dispute broadly compete within the Cigarette and Tobacco industry and more particularly in the vaping and electronic cigarette ("e-cigarette") sector of the Cigarette and Tobacco industry, and with further particularity within the cig-a-like sector of the vaping and e-cigarette sector. Presented below is an overview of the Cigarette and Tobacco industry and the vaping and e-cigarette sector from 2013 to the present.

A. THE INDUSTRY BEFORE 2013

1. DEFINITION OF INDUSTRY

23. Prior to 2013, companies in the Cigarette and Tobacco industry manufactured "cigarettes, cigars, smoking and chewing tobacco, and other tobacco products such as snuff."⁸

2. CONTRACTING DEMAND FOR SMOKING

24. In 2012, industry analysts noted that increased "public awareness of the adverse health effects of smoking, increasing regulation and rising taxes" were major factors affecting the Cigarette and Tobacco industry.⁹ Industry analysts further noted that the consumption of tobacco products had consistently fallen in the United States from 2008 to 2012, "with the biggest decline occurring during 2009."¹⁰ These data are consistent with the data coming from the Bureau of Economic Analysis which showed that real personal consumption expenditure on tobacco products fell consistently from 2006 through 2010, with declines continuing through 2012.¹¹ In 2012, industry analysts forecasted that domestic industry revenue would decline from 2013 through 2017 as demand for tobacco products was expected to continue falling.¹²

3. INDUSTRY RESTRICTIONS

25. Tobacco product manufacturers are required to make annual payments to states as part of the Master Settlement Agreement (MSA)."¹³ "The MSA also includes regulations on

⁶ See Exhibit 1.

⁷ See Exhibit 1.

⁸ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 2.

⁹ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 5.

¹⁰ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 5.

¹¹ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 5.

¹² IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 8.

¹³ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 6.

C. BENEFITS ASSOCIATED WITH THE PATENTS-IN-SUIT

76. It is my understanding that e-cigarettes were associated with a number of problems including poor atomization (the process of separating liquid into fine particles) also referred to as vaporizing.¹⁷⁶ I understand that the device that controls the atomization is referred to as the atomizer or cartomizer. I understand that poor atomization was a barrier that prevented cigarette smokers from switching to e-cigarettes.¹⁷⁷
77. Dr. Vallee has informed me that the Patents-in-Suit relate to an e-cigarette that includes a battery and a cartridge which connect to one another.¹⁷⁸ The cartridge contains a heating element and a liquid reservoir that holds e-juice.¹⁷⁹ I understand that the e-juice is wicked through a cartridge having an axial air passage that extends down the middle of a cylindrical-shaped e-cigarette cartridge by which a user can pull air when inhaling.¹⁸⁰ More specifically, I understand that a transverse heating coil is positioned in the airflow passageway and that a wick draws the e-liquid to the heating coil which in turn vaporizes the e-liquid solution in the airflow passageway.¹⁸¹ Mr. Conley testified that the foundational concept of the Fuma-designed cartomizer is that it contains a wicking material and a heating element in or around the central axial passage airflow.¹⁸² This resulted in vaporizing the solution within the airflow.¹⁸³
78. The '604 and '881 patents define a complete and operative e-cigarette and/or e-cigarette cartridge whose claim elements define all the necessary features to vaporize an e-liquid in a way that is superior to the pre-existing e-cigarette designs.¹⁸⁴ The patented e-cigarette design operates in a manner that, by RJRV's admission, was better and different than any of the existing e-cigarette products that RJRTC had analyzed and provided a better user experience that was more like a traditional cigarette.¹⁸⁵ According to Dr. Vallee, the Patents-in-Suit are responsible for a better user experience compared to other e-cigarette products that pre-dated the Fuma invention.¹⁸⁶

¹⁷⁶ Discussion with Dr. Vallee.

¹⁷⁷ Discussion with Dr. Vallee.

¹⁷⁸ Discussion with Dr. Vallee.

¹⁷⁹ Discussion with Dr. Vallee.

¹⁸⁰ Discussion with Dr. Vallee.

¹⁸¹ Discussion with Dr. Vallee.

¹⁸² Deposition of Mr. Conley, December 4, 2019, page 78:23-79:4.

¹⁸³ Deposition of Mr. Conley, December 4, 2019, page 79:17-23.

¹⁸⁴ Discussion with Dr. Vallee.

¹⁸⁵ Discussion with Dr. Vallee.

¹⁸⁶ Discussion with Dr. Vallee.

growth and profit potential” so speed to market was “top of mind.”²⁷⁶ RJRTC understood that any product on the market before the anticipated FDA regulations would be allowed to remain on the market.²⁷⁷ In particular, RJRTC did not want to go to market after the effective date of new FDA regulations because they anticipated that they would then have to comply with certain premarket clearance activities (e.g., Pre Market Tobacco Product Application “PMTA”) before they could offer their product to consumers.²⁷⁸ By the end of the 2011, RJRTC decided to focus on the design that is presently referred to as the Vuse Solo.²⁷⁹

102. In April 2012, RAI created RJRV as an e-cigarette company. RJRV began offering product under the Vuse brand in limited distribution in 2012 and launched the Vuse Solo throughout the state of Colorado in 2013.²⁸⁰ The company launched the Vuse Solo nationally in 2014.²⁸¹
103. RJRV advertised Vuse Solo on television.²⁸² The 2013 advertisements are available on YouTube and presented below are screen shots of those advertisements.²⁸³



104. The purpose of these advertisements was to build the Vuse brand name as the “Vapor Authority” which would allow RJRV to “maximize” the potential for their existing e-cigarette products and leverage that brand to sell other forms of vaping technology including mods, tanks, and vapors.²⁸⁴ According to a 2014 New York Times article, Vuse was planning a national marketing campaign including television advertisement in major markets.²⁸⁵



²⁷⁶ RJRV-F000553690 - RJRV-F000553701 at RJRV-F000553693.

²⁷⁷ RJRV-F000553690 - RJRV-F000553701 at RJRV-F000553695.

²⁷⁸ RJRV-F000553690 - RJRV-F000553701 at RJRV-F000553695.

²⁷⁹ RJRV-F000695725 - RJRV-F000695726.

²⁸⁰ https://journalnow.com/business/business_news/local/article_bb7b7a84-ceb2-11e2-b775-0019bb30f31a.html

²⁸¹ <https://www.cspdailynews.com/tobacco/rj-reynolds-vapor-begin-national-distribution-vuse>

²⁸² Reynolds American, Inc., Company Conference Presentation, February 17, 2015, page 7;

²⁸³ https://www.youtube.com/watch?v=zzEK7TL-W_o; <https://www.youtube.com/watch?v=JSiU3MbLdw>

²⁸⁴ Reynolds American Inc., Investor Day Presentation, November 2015, pages 85 and 86

²⁸⁵ <https://www.nytimes.com/2014/06/17/business/a-bolder-effort-by-big-tobacco-on-e-cigarettes.html>

the reasonable royalty damages structured as a lump sum for both Patents-in-Suit, I have calculated the present value of RJRV's Accused Revenues from July 1, 2017 to July 27, 2030, the expected date of patent expiration, as of January 3, 2017.

2. ASSESSMENT OF CUSTOMER DEMAND

138. I assessed the degree to which the Patents-in-Suit drive demand for the Accused Products by assessing the benefits associated with the patented invention, the alignment of those benefits with RJRV's stated design goals, and RJRV's own statements regarding components of the e-cigarettes, as detailed below.

a) DEMAND DRIVERS

139. Mr. Delen, the former consultant to RJRTC, told investors during a company presentation that an e-cigarette attribute needed to make it attractive to smokers was for it to be as close "as possible to the classic smoking experience."³⁴⁸ He also noted that that existing e-cigarettes left something to be desired which was preventing repeat use by customers.³⁴⁹ The desire of mimicking the "classic smoking experience" is consistent with the information found in RJRV's production.
140. For example, RJRTC notes in internal presentations that consumers demand a product that is: satisfying, intuitive, simple, familiar, offers a pleasant taste, and provides an experience that's similar to traditional cigarettes, as illustrated below.³⁵⁰



b) BENEFITS OF THE PATENTS-IN-SUIT

141. Prior to the Patents-In-Suit, it is my understanding that conventional e-cigarettes suffered from poor e-juice atomization.³⁵¹ According to Dr. Vallee, the poor e-juice atomization was a barrier to adoption.³⁵² It is my understanding that the Patents-in-Suit relate to a complete and operative e-cigarette and/or e-cigarette cartridge whose claim elements define all the necessary features to vaporize/atomize an e-liquid in a way that is superior

³⁴⁸ Reynolds American Inc. Company Conference Presentation | May 22, 2012 p. 9-10.

³⁴⁹ Reynolds American Inc. Company Conference Presentation | May 22, 2012 p. 9-10.

³⁵⁰ RJRV-F000158250 to RJRV-F000158276 at 256.

³⁵¹ Discussion with Dr. Vallee.

³⁵² Discussion with Dr. Vallee.

to existing e-cigarette designs.³⁵³ According to Dr. Vallee, the '604 and '881 patented technology is responsible for the better user experience compared to other e-cigarette products that pre-dated the Fuma invention.³⁵⁴

142. Mr. Conley testified in his deposition that he recognized that the e-cigarettes suffered from poor e-juice atomization and wanted to address the problem.³⁵⁵ Mr. Conley stated that the number one reason for poor e-juice atomization in previous e-cigarettes was that the liquid vaporization was not occurring within the airflow.³⁵⁶ Mr. Conley also testified that the foundational concept of the Fuma technology was that it contained the wicking material and the heating element in or around the central axial passage airflow.³⁵⁷ This resulted in vaporizing the solution within the airflow.³⁵⁸
143. The patented e-cigarette design operates in a manner that, by Mr. Potter's and RJRV's admission, was better and different than any of the existing e-cigarette products that RJRTC had analyzed and provided a better user experience that was more akin to traditional cigarette.³⁵⁹ For example, Mr. Potter connects Fuma's patented heating coil design to customer demand by stating that Fuma's aerosolizer and mouthpiece designs were its "magic" and by explaining how Fuma's design provides benefits that are consistent the drivers of demand.³⁶⁰
 - Satisfying with Pleasant Taste: "Significant, is the absence of the sweet aftertaste..."
 - Intuitive: "...very close to intuitive to use..."
 - Simple: "...the Fuma product is simple..."
 - Familiar: "...the experience is far closer to a cigarette experience..."
144. RJRTC's internal presentation that reference Fuma's design echo these points. For example, RJRTC stated that Fuma's patented technology was the "best way forward"³⁶¹ that offered the "highest potential" with a "unique heating element" and a "new central flow design."³⁶² RJRTC also stated that it considered Fuma's designs to "advance their aerosol platform" in a way that would allow them to "place a bet" in a "promising e-cig approach."³⁶³ On the whole, RJRTC labeled Fuma's patented technology as "Enabling," as illustrated below:³⁶⁴

³⁵³ Discussion with Dr. Vallee.

³⁵⁴ Discussion with Dr. Vallee.

³⁵⁵ Deposition of Mr. Conley, December 4, 2019 p. 77-78.

³⁵⁶ Deposition of Mr. Conley, December 4, 2019 p. 45-46.

³⁵⁷ Deposition of Mr. Conley, December 4, 2019 p. 45-46.

³⁵⁸ Deposition of Mr. Conley, December 4, 2019 p. 45-46.

³⁵⁹ Discussion with Dr. Vallee.

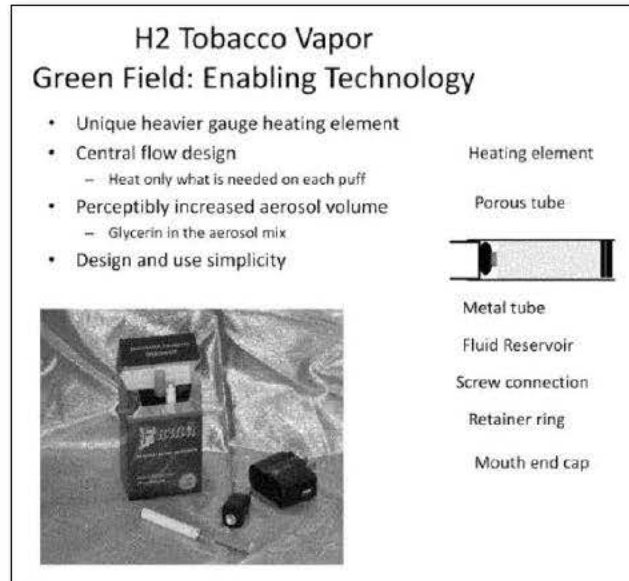
³⁶⁰ RJRV-F000684461 - RJRV-F000684463.

³⁶¹ RJRV-F000154458 - RJRV-F000154472 at 468.

³⁶² RJRV-F000154458 - RJRV-F000154472 at 469.

³⁶³ RJRV-F000154458 - RJRV-F000154472 at 470.

³⁶⁴ RJRV-F000678593 - RJRV-F000678605 at 602.



c) **SUMMARY**

145. Based on the above facts, which are summarized below, I conclude that it is reasonable to conclude that the patented invention is the basis of customer demand.
- The Patents-in-Suit relate to a design that better aerosolizes vapor and was considered “magic”³⁶⁵ and “enabling”.³⁶⁶
 - This aerosolizing technology allows for a satisfying, intuitive, simple, familiar product that offers a pleasant taste.³⁶⁷
 - Demand is driven by a product design that allows for a satisfying, intuitive, simple, familiar product that offers a pleasant taste.³⁶⁸
146. Furthermore, it appears that certain of the non-patented elements included within the Vuse products are not driving demand and are included within other e-cigarettes. Mr. Delen stated in a presentation to investors that prior to the introduction of Vuse, existing designs offered an inconsistent smoking experience.³⁶⁹ RJRV’s presentations provide an overview of existing technology:
- During a product review, RJRV noted that existing 3-piece designs included a control circuit-to control the power source, indicator lights, and the atomizing device, as illustrated below:³⁷⁰

³⁶⁵ RJRV-F000684464.

³⁶⁶ RJRV-F000678593 to RJRV-F000678605 at 602.

³⁶⁷ RJRV-F000684461 - RJRV-F000684463.

³⁶⁸ RJRV-F000684461 - RJRV-F000684463.

³⁶⁹ Reynolds American Inc., Analyst and Investor Day, November 12, 2012 p. 11.

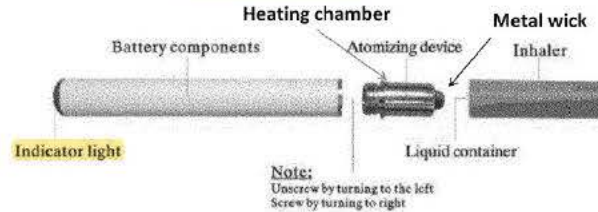
³⁷⁰ RJRV-F000154458 - RJRV-F000154472 at 462.

E-Cigarette standard 3 piece design

- Generally the control circuits cut the power after about 2 sec. to protect the fine wires of the heating coil and metal wick
- Users complain of messiness, fluid leakage and frequent cleaning of the coil
- Most follow a reverse flow design e.g. liquid must move counter to air flow
- Our current belief is that most of the aerosol deposits in mouth, throat and upper airway
- Current theory for why PG: lower boiling point, wet ability and flow ability vs.
- Glycerin's highly viscous nature

1. Structure of the Super Cigarette body

The Mini Electronic Cigarette body is composed of atomizing device, microcomputer controlled circuit and lithium battery components. An operating mode indicator light at tip of the battery components.



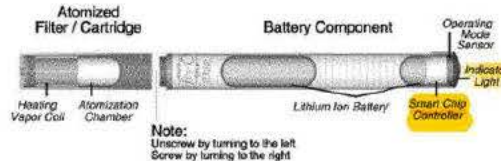
- In addition, RJRTC notes that existing two-piece designs use a microcomputer-controlled circuit to control the operations of a power source, heating coil and an indicator light, as illustrated below.³⁷¹

Two piece e-cig

- The newest models attempt to resolve issues by combining the 'atomizer' and reservoir
- Less mess, simpler, less tampering, preserve the "razor blade model"
 - Smoke 51 appears unique in it's down stream flow design

Smoke 51

Structure: The Fifty-One Duo™ Electronic Cigarette is comprised of an atomizing device, a microcomputer controlled circuit, and a rechargeable lithium battery. An operating mode indicator light can be found at the tip of the battery.



147. These documents indicate that others, besides RJRV, were using microprocessors, indicator lights, and a power source.³⁷² Instead, the point of differentiation, by Mr. Potter's and RJRV's own admission, was the technology patented by Fuma which was better and different ("magic" and "enabling") than any of the existing e-cigarette products

³⁷¹ RJRV-F000154458 - RJRV-F000154472 at 464.

³⁷² Reynolds American Inc. Analyst/Investor Day, Nov 12, 2012 Page 11; RJRV-F000154458 - RJRV-F000154472 at 464.

that RJRTC had analyzed and provided a better user experience that was more like a traditional cigarette.³⁷³

3. CALCULATION

148. I have analyzed RJRV's financial production to calculate my royalty base which included sales and volume reports for the Vuse brand generated from RJRV's accounting system, SAP ("SAP Sales Reports")³⁷⁴ and RJRV's profit and loss statements ("RJRV P&Ls"). According to deposition testimony by Mr. Nicolas Gilley, Vice President of Marketing Performance at RJRTC, the RJRV P&Ls represent RJRV's internal reporting and official documentation.³⁷⁵ Mr. Gilley also testified that he would expect any differences between the SAP Sales Reports and the RJRV P&Ls to be "small" and caused by the consolidation process, which could include corrections and adjustments that are both system generated and manually entered.³⁷⁶
149. Based on my review of the SAP Sales Reports and RJRV P&Ls, I understand that RJRV tracks revenue at different levels. First it tracks revenue generated based on list price ("List Price") which it refers to as gross value in the SAP Sales Reports ("List Revenue"). From List Revenue, RJRV subtracts negotiated term discounts and other discounts, which can include one-time special allowances associated with product introductions, and any returns resulting in net revenue ("Net Revenue").
150. I compared the Net Revenues reported in the SAP Sales Report to the Net Revenues to the RJRV P&Ls from 2013 through 2019. When I note differences between the SAP Sales Report and the RJRV P&L I reconcile the SAP Sales Report to the P&L amounts. RJRV did not produce a P&L for 2020. As such I was unable to reconcile the 2020 SAP Sales Report data and I know from my analysis of the other years and Mr. Gilley's deposition testimony that there are differences based on the consolidation process. Therefore, instead of relying upon unreconcilable SAP Sales Report figures for the first quarter of 2020 and then annualizing those figures to account for the remainder of 2020, I have estimated all of RJRV's actual 2020 revenues. If and when RJRV updates its financial production, I reserve the right to update my 2020 figures using the same reconciliation process I used for the 2013 to 2019 revenues.
151. As detailed in Exhibit 10, RJRV earned approximately [REDACTED] [REDACTED] in Net Revenues from the sale of the Accused Products from 2013 through 2019. RJRV earned these Net Revenues from the sale of the three different packages including the Solo and Ciro Kits,

³⁷³ Discussion with Dr. Vallee.

³⁷⁴ Through at least December 2018, the SAP Sales Reports represented sales made to wholesalers. Based on the 2018 deposition testimony of Nick Gilley, in January of 2018 RJRV began selling Vuse products directly to the consumer through its online store. It is my understanding based on Mr. Gilley's deposition testimony that the SAP system was configured to track online sales in 2018. (Deposition Mr. Gilley dated July 10, 2018, p. 66:12-68:5.) Additionally, the results of my reconciliation between 2018 SAP Sales Reports and 2018 RJRV P&Ls, indicate that the 2018 online sales are either captured in the SAP Sales Reports or are relatively small. My SAP Sales Reports reconciliation to the RJRV P&Ls for 2019 reflects larger differences and I rely on the 2019 RJRV P&Ls where needed as it was represented as being RJRV's official documentation.

³⁷⁵ Deposition of Mr. Gilley dated July 10, 2018, p. 156:8-10.

³⁷⁶ Deposition of Mr. Gilley dated July 10, 2018, p. 155:17-22.

- **The 2016 Projections:** RJRV also prepared sales projections in 2016.³⁸⁵ These projections indicate that the company was expecting its revenue from Solo Cartridges Pack [REDACTED] from 2016 to 2025, [REDACTED]. Further, these projections indicate that the company was expecting its unit sales of Solo cartridges [REDACTED] from 2016 to 2025, [REDACTED].
- **The 2017 Projections:** RJRV also prepared sales forecasts in 2017.³⁹⁰ These projections were prepared by RJRV in March 2017 and show that the company was expecting its revenue from Vuse products [REDACTED] from 2017 to 2019, a [REDACTED]. Further, these projections show that the company was expecting its unit sales of Vuse products [REDACTED] from 2017 to 2019, a [REDACTED].

iii. Forecasting RJRV's Accused Net Revenue

156. I have performed a scenario analysis to forecast the Net Revenue of the Accused Products in 2020 and 2021. In the first scenario, I have assumed that the Net Revenue of the Accused Products will increase by 3% per year. A 3% growth rate is reasonable because that is equal to the risk-free rate in 2019.³⁹⁵ In the second scenario, [REDACTED]. [REDACTED] As detailed in Exhibit 4.a, my first scenario forecasts the Net Revenues of the Accused Products from January 1, 2020 through March 31, 2021 to be [REDACTED]. As detailed in Exhibit 4.b, my second scenario forecasts the Net Revenues of the Accused Products from January 1, 2020 through March 31, 2021 to be [REDACTED].
157. I further calculate a total royalty base for these two scenarios as follows:
- Scenario 1: I calculate the royalty base of [REDACTED] by adding (1) the July 1, 2017 to December 31, 2019 Accused Product Net Revenue [REDACTED] to (2) the January 1, 2020 to March 31, 2021 projected Net Revenues from scenario one of [REDACTED] ("Running Royalty Base").³⁹⁶ I reserve the right to update

³⁸⁵ RJRV-F000601552 to 601570 at 601561

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

³⁹⁰ RJRV-F000071648

³⁹¹ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

³⁹⁵ <https://www.duffandphelps.com/insights/publications/valuation/us-normalized-risk-free-effective-september-30-2019#:~:text=However%2C%20based%20on%20declining%20real,until%20further%20guidance%20is%20issued.>

³⁹⁶ See Exhibit 4.a.

from the sale of cartridges provides a second indication of the profits that RJRV expected to earn (██████) after it achieved its other priorities (national expansion and market share).

186. In recognition of the fact that RJRV has contributed its own manufacturing processes, has taken on the business risks of selling Fuma's patented invention at a national scale and is managing the process of distributing the Accused Products through thousands of its retailer customers, I have apportioned the two profit indicators noted above (██████) using a bill of materials analysis ("BOM Analysis"). A BOM Analysis shares profits between licensing parties based on a comparison of the cost of the patented features relative to cost for the entire product.
187. I analyzed the BOM materials data produced by RJRV for both the Solo, which are made in the United States, and the Ciro which are made abroad and shipped to the United States. The Solo BOM provides a detailed breakdown of the components used to manufacture the Solo products while the Ciro BOM lists cost by category. Therefore, my BOM Analysis is based on the Solo BOMs.
- The Solo Cartridges BOM shows fifteen components including a case, a cartridge, a box, a label, the e-liquid, the end cap, the base, a terminal, a heater wick, a flow tube, a stainless tube, a printed circuit board, a substrate, a blister lidding, and some adhesive.⁴⁴⁰ As such, the total material cost of these elements in 2017 amounts to ██████ cartridge.⁴⁴¹ Of these elements, it is my understanding that the Patents-in-Suit relate to the e-liquid, an end cap, a base, terminals, a heater element, a flow tube, the stainless-steel housing, and substrate.⁴⁴² The total cost of the elements that are related to the Patents-in-Suit in 2017 amounts to ██████ per cartridge.⁴⁴³ I then compared the cost of the patented components ██████ relative to the total cost of the components (██████). This comparison indicates that the cost of the patented components is equal to ██████ of the total cost of the cartridge.⁴⁴⁴
 - The Solo kit BOM shows eighteen components including a case, a cartridge, a box, a label, the e-liquid, the end cap, the base, a terminal, a heater wick, a flow tube, an external tube, a printed circuit board, a substrate, a blister lidding and forming web, adhesive, Solo kit packaging, a power unit, and a charger.⁴⁴⁵ As such, the total cost of these elements in 2017 amounts to ██████ per cartridge.⁴⁴⁶ Of these elements, it is my understanding that the Patents-in-Suit relate to the e-liquid, an end cap, a base, terminals, a heater element, a flow tube, the power unit, and the external tube.⁴⁴⁷ The total cost of the elements that are related to the Patents-in-Suit in 2017 amount to ██████ per Solo kit.⁴⁴⁸ I then compared the cost

⁴⁴⁰ RJRV-F000050590 to RJRV-F000050592.

██████

⁴⁴² Discussion with Dr. Vallee.

██████

⁴⁴⁴ ██████

⁴⁴⁵ RJRV-F000050590 to RJRV-F000050592.

⁴⁴⁶ See ██████

⁴⁴⁷ Discussion with Dr. Vallee.

⁴⁴⁸ See ██████

of the patented components [REDACTED] relative to the total cost of the components ([REDACTED]). This comparison indicates that the cost of the patented components is equal to [REDACTED] of the total cost of the Solo kit.⁴⁴⁹

188. I then apportioned the Gross Profits RJRV earned from the sale of Accused Products ([REDACTED] and from the Accused Cartridges ([REDACTED]) using the ratio of the patented components as compared to the non-patented components ([REDACTED] to arrive at two royalty indicators, 14.0% and 16.6%, respectively.⁴⁵⁰ The Solo kit BOM analysis provides a higher allocation rate given the cost of the power source -- which means that by using the Solo Cartridge BOM analysis as the basis for allocating value, I have built in an apportionment of the value of the power source with this value being allocated to RJRV.

2. ANALYSIS OF FUMA'S PROFITS

189. In mid-2009, Fuma had no revenues and had never sold an electronic cigarette.⁴⁵¹ Over the next two years, Fuma's revenues increased to \$2.5 million.⁴⁵² In 2011, Fuma realized gross profits of 54.4% from the sale of Embodying Products and operating profits of 32.4%.⁴⁵³ At this time, Fuma was the only company in the market selling a product that incorporated the Patents-in-Suit.
190. Starting in 2013, a number of large tobacco manufacturers entered the market for e-cigarettes. For example, Lorillard acquired Blu in 2012 and then Skycig in 2013. Philip Morris launched the Mark Ten in 2013.⁴⁵⁴ Fuma's financial performance declined during these years, and after RJRV launched its Accused Products and achieved a leading market share position. In 2013, Fuma's Embodying revenue decreased to \$1.8 million.⁴⁵⁵ It fell again in 2014 (to approx. \$935,000) and again in 2015 (to approx. \$641,000).⁴⁵⁶ From 2015 through 2019 the company's annual Embodying revenue has generally held constant and averaged approximately \$722,000, per year.⁴⁵⁷ Fuma's gross profits from the sales of Embodying Products also decreased between 2011 and 2017. As illustrated in Exhibit 23, Fuma operated at a loss in 2013 and 2014 and then from 2015-2019 Fuma's operating profit margins from the sale of Embodying Products averaged approximately 20% of its net revenue.⁴⁵⁸
191. Fuma's 2011 operating profit margin from its Embodying Products is informative to the parties at the hypothetical negotiation because this is the amount of profit that Fuma earned prior to major tobacco companies entering the market. As noted throughout this report, of these companies RJRV had the largest market share.

⁴⁴⁹ [REDACTED]

⁴⁵⁰ See Exhibit 9.

⁴⁵¹ Exhibit B, C and D to the Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

⁴⁵² See Exhibit 24.

⁴⁵³ See Exhibit 23.

⁴⁵⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5789794/>.

⁴⁵⁵ See Exhibit 24

⁴⁵⁶ See Exhibit 24.

⁴⁵⁷ See Exhibit 24.

⁴⁵⁸ See Exhibit 23.

- “We were in the process of developing a private label e-cigarette until the launch of VUSE...”⁵⁹⁷
- “You’re 64% of my total vapor category already...”⁵⁹⁸
- “Vuse is an excellent product”⁵⁹⁹

261. For all of these reasons, this factor would have a strong positive impact on the royalty rate within the Referenced Range.

12. FACTOR 12: THE PORTION OF THE PROFIT OR OF THE SELLING PRICE THAT MAY BE CUSTOMARY IN THE PARTICULAR BUSINESS OR IN COMPARABLE BUSINESSES TO ALLOW FOR THE USE OF THE INVENTION OR ANALOGOUS INVENTIONS

262. [REDACTED]

263. [REDACTED]

264. [REDACTED]

265. For all of these reasons, this factor has a neutral impact on the royalty rate within the Referenced Range.

13. FACTOR 13: THE PORTION OF THE REALIZABLE PROFIT THAT SHOULD BE CREDITED TO THE INVENTION AS DISTINGUISHED FROM NONPATENTED ELEMENTS, THE MANUFACTURING PROCESS, BUSINESS RISKS, OR

⁵⁹⁷ RAI, Investor Day 2014, November 17, Presentation, p. 107-108.

⁵⁹⁸ RAI, Investor Day 2014, November 17, Presentation, p. 107-108.

⁵⁹⁹ RAI, Investor Day 2014, November 17, Presentation, p. 107-108.

⁶⁰⁰ RJRV-F000517220 - RJRV-F000517243.

⁶⁰¹ [REDACTED]
⁶⁰² [REDACTED]
[REDACTED]

**SIGNIFICANT FEATURES OR IMPROVEMENTS ADDED BY
THE INFRINGER**

266. This factor relates to an apportionment of profits to features other than the patented features. I have previously provided a quantitative assessment of the portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements of the product as part of the Income Approach. The balance of this section relates to a qualitative assessment.
267. At the time of the hypothetical negotiation, Fuma would have recognized that RJRTC, RJRV's sister company, is one of the largest tobacco companies in the U.S.⁶⁰⁵ and that RJRV's products are made in partnership with RJRTC in RJRTC's manufacturing facility.⁶⁰⁶ The record indicates that the company has invested millions of dollars for automated e-cigarette manufacturing equipment.⁶⁰⁷ In addition, Fuma would also recognize that RJRV maintained a large distribution network of thousands of retail outlets across the United States.⁶⁰⁸
268. The licensee would, under the construct of the hypothetical license agreement, be assuming risk of the manufacture and sale of the Accused Products and would seek to pay a lower royalty in order to be compensated for the assumption of such risk. This factor has a downward influence on the reasonable Royalty Range.

**14. FACTOR 14: THE OPINION TESTIMONY OF QUALIFIED
EXPERTS**

269. This factor requires consideration of the opinion testimony of qualified experts. I understand that Dr. Vallee will submit an expert report on July 23, 2020. It is my understanding that Dr. Vallee will opine that the Patents-in-Suit are valid and infringed. Given that I have already assumed that RJRV will be found liable for infringing the Patents-in-Suit, this factor has a neutral effect on the hypothetically negotiated Royalty Range.

**15. FACTOR 15: THE AMOUNT THAT A LICENSOR (SUCH AS THE
PATENTEE) AND A LICENSEE (SUCH AS THE INFRINGER)
WOULD HAVE AGREED UPON (AT THE TIME THE
INFRINGEMENT BEGAN) IF BOTH HAD BEEN REASONABLY
AND VOLUNTARILY TRYING TO REACH AN AGREEMENT,
THAT IS, THE AMOUNT WHICH A PRUDENT LICENSEE—
WHO DESIRED, AS A BUSINESS PROPOSITION, TO OBTAIN A
LICENSE TO MANUFACTURE AND SELL A PARTICULAR
ARTICLE EMBODYING THE PATENTED INVENTION—
WOULD HAVE BEEN WILLING TO PAY AS A ROYALTY AND
YET BE ABLE TO MAKE A REASONABLE PROFIT AND
WHICH AMOUNT WOULD HAVE BEEN ACCEPTABLE BY A**

⁶⁰⁵ Reynolds American Inc. Form 10-K Fiscal Year Ended December 31, 2016 p. 31

⁶⁰⁶ Reynolds American Inc. Form 10-K Fiscal Year Ended December 31, 2016 p. 8

⁶⁰⁷ <https://www.bizjournals.com/triad/news/2015/10/01/reynolds-moves-all-e-cig-production-to.html>

⁶⁰⁸ Reynolds American Inc. Form 10-K Fiscal Year Ended December 31, 2016 p. 8

consumers away from traditional cigarettes, the lack of a commercially acceptable non-infringing alternative design, RJRV's own instruction to its employees not to redesign the Accused Products due to regulatory regulations, and Fuma's "magic" and "game-changing" design that provided a vaping experience that was familiar, intuitive, satisfying, and simple. The parties would also recognize that RJRV was a large company with the resources and relationships to sell the Accused Product nationally and that the agreement would have been structured on non-exclusive terms. In light of all of these facts, it is my opinion that the parties would negotiate a final royalty at the low end of the Reference Range (14.0%).

XIV. DAMAGES CONCLUSIONS

278. As noted above, I have performed two scenario analyses. The first scenario assumes a Net Revenue growth rate of 3% while the second scenario assumes a Net Revenue growth rate of [REDACTED].
279. If liability is found with respect to the Patents-in-Suit, and the fact finder structures the reasonable royalty as a running royalty, then Fuma would be entitled to collect reasonable royalty damages that range from [REDACTED] for the infringement of the Patents-in-Suit from July 1, 2017 through March 31, 2021.⁶²⁹
280. If liability is found with respect to the Patents-in-Suit, and the fact finder structures the reasonable royalty as a lump sum, then Fuma would be entitled to collect reasonable royalty damages that range from [REDACTED].⁶³⁰ The first amount is calculated assuming a 3% growth rate and a 12.46% discount rate. The second amount is calculated assuming an [REDACTED] growth rate and a 11% discount rate.

XV. POSSIBLE REVISIONS TO THIS REPORT

281. The opinions expressed herein are based on the information made available to me as of the date of this report. I reserve the right to review any information produced by the parties subsequent to the date of this report and update this report as necessary to reflect any additional analysis and conclusions. In addition, if the Defendant submits any additional opinions regarding damages, I reserve the right to review these analyses and respond if necessary.

XVI. PROFESSIONAL FEE ARRANGEMENT

282. My billing rate is \$450 per hour for services performed in connection with this matter. In addition, I will be reimbursed for all reasonable out-of-pocket expenses incurred in connection with my analyses and testimony in this case. Neither my compensation, nor Stout's compensation, is dependent on the outcome of this matter or the opinions expressed in this report.


Stephen Holzen
July 23, 2020

⁶²⁹ See Exhibit 1.

⁶³⁰ See Exhibit 1.

[REDACTED]
 [REDACTED]
 [REDACTED]